

Williams Gateway Freeway Alignment And Environmental Overview Study

Draft

Preferred Alignment Summary Report

June 2005
(revised June 29, 2005)

Prepared for



Prepared by



Table of Contents

EXECUTIVE SUMMARY	1
1.0 PROJECT OVERVIEW	5
1.1 Purpose	5
1.2 Background	5
1.3 Study Area.....	6
1.4 Project Phasing	8
1.5 Study Review Team.....	8
2.0 PUBLIC INVOLVEMENT	9
2.1 Stakeholder Interviews Conducted	9
2.2 Public Open House.....	12
3.0 TIER 1 (CRITICAL FLAW) ANALYSIS.....	13
4.0 TIER 2 EVALUATION	16
4.1 Alternatives Considered.....	16
4.2 Tier 2 Evaluation.....	16
4.3 Investigation of “Super Street” or “Parkway” Options	18
4.4 Continuation to Ironwood Drive.....	18
5.0 TIER 3 EVALUATION	21
5.1 Evaluation Criteria	21
5.2 Tier 3 Evaluation Matrix	23
5.3 “Collapsed” Matrix Showing Evaluation Criteria Only	34
6.0 CONCLUSION	39

Appendix A - Investigation Of “Super Street” Or “Parkway” Options

List of Figures

Figure E-1	Recommended Corridor.....	4
Figure 1-1	Study Boundaries.....	7
Figure 3-1	Tier 1 System Corridors	14
Figure 4-1	Tier 2 corridors.....	17
Figure 5-1	Tier 3 Draft Corridors	22
Figure 6-1	Recommended Corridor.....	39

List of Tables

Table 2.1: Stakeholder Interviews	9
Table 3.1: Tier 1 (Critical Flaw) Corridor Evaluation Matrix	15
Table 4.1: Tier 2 Corridor Alternatives Evaluation Matrix	19
Table 5.1: Williams Gateway Freeway Alignment Study-Tier 3 Matrix June 7, 2005	24
Table 5.2: Williams Gateway Freeway Alignment Study-Tier 3 Matrix June 7, 2005	35
Table 5.3: Williams Gateway Freeway Alignment Study-Tier 3 Matrix June 7, 2005	37

EXECUTIVE SUMMARY

Purpose and Background

Beginning in November 2004, the Maricopa Association of Governments (MAG) initiated an Alignment and Environmental Overview Study for the future Williams Gateway Freeway. The purpose of the study is to identify a preferred alignment for the Maricopa County portion of this planned freeway, and to develop detailed information regarding facility characteristics, right-of-way needs, environmental issues, and “environmental justice” concerns under Title VI of the Civil Rights Act of 1964. This information will help guide future adjacent development in the area and provide essential input for Arizona Department of Transportation (ADOT) studies regarding the corridor.

The Williams Gateway Corridor is an integral part of the MAG Regional Transportation Plan (RTP) adopted by the MAG Regional Council in November 2003 and endorsed one year later by voters in connection with their approval of Proposition 400. This proposed freeway will begin at the Santan Freeway (State Route 202L) in the vicinity of Williams Gateway Airport, and then head generally eastward to the Maricopa/Pinal county line at Meridian Road. The corridor is approximately 4 to 6 miles long from the Santan Freeway to the Maricopa/Pinal county line. ADOT is currently conducting a Corridor Definition Study to continue the route eastward through Pinal County to potentially link up with US 60 or some other state route.

According to the 20-year phased transportation development program incorporated in the MAG RTP, preliminary engineering and right-of-way protection for the Williams Gateway Freeway will occur in Phase I (2005-2010), with funding for final design and right-of-way provided in Phase II (2011-2015). ADOT would construct the Maricopa County portion of the facility during Phase III (2016-2020).

The study is organized into two phases. Phase 1, to be completed in July 2005, resulted in a recommended preferred alignment for the future Williams Gateway Freeway. Phase 2, scheduled for completion by the end of 2005, will detail the preferred alignment, include an environmental overview, and further assess Environmental Justice/Title VI factors.

Tiered Evaluation Process

Phase 1 of the study involved a tiered evaluation process, in which a wide range of alignment alternatives was systematically screened down to a single preferred alternative. In Tier 1 of the screening process, two broad corridor concepts—known as Greenfield and Hawes 1—were eliminated because of critical flaws precluding their further consideration in this project. The following characteristics were considered critical flaws:

- Inconsistency with the MAG RTP, in terms of either location or cost.
- Inconsistency with adopted plans and policies of host local jurisdictions.

-
- Interference with the mission and operations of Williams Gateway Airport.
 - Unacceptable impacts on existing land uses and economic activities.

The remaining generalized corridor, known as Hawes 2, generated seven specific alignments for consideration in Tier 2 of the evaluation. These alignments all begin at the same location along the Santan Freeway just east of Hawes Road, but turn east at different locations. The alternatives are numbered by the location of their eastward turn, from north to south.

These seven alternatives were evaluated in Tier 2, which used the following evaluation criteria:

- Economic Development
- Consistency with Community Plans
- Transportation Service
- Environmental Compatibility (Natural/Physical/Human)
- Cost Minimization
- Pinal County Considerations

This phase resulted in the elimination of Alternatives 1, 2, 4 and 6, for a variety of reasons including land use impacts and displacement of section-line arterial streets needed to provide future mobility and access. In the third and final tier of the evaluation process, the three remaining alternatives—3 (Frye Road alignment), 5 (Willis Road alignment) and 7 (Ryan Road alignment)—were analyzed in much greater detail, using the following general criteria:

- Mobility
- Safety
- General Plan Consistency
- Access
- Natural Environment
- Physical Environment
- Socioeconomic Impacts
- Estimated Cost
- Pinal County Considerations

In addition, a set of specific performance measures was used to comprehensively evaluate the performance of the three Tier 3 alternatives with respect to each of the above criteria. Each alternative was rated as “Most Desirable,” “Less Desirable” or “Least Desirable” on each of the 31 performance measures. The overall results of the Tier 3 evaluation across all criteria and performance measures were then used to develop a recommendation for the preferred alternative.

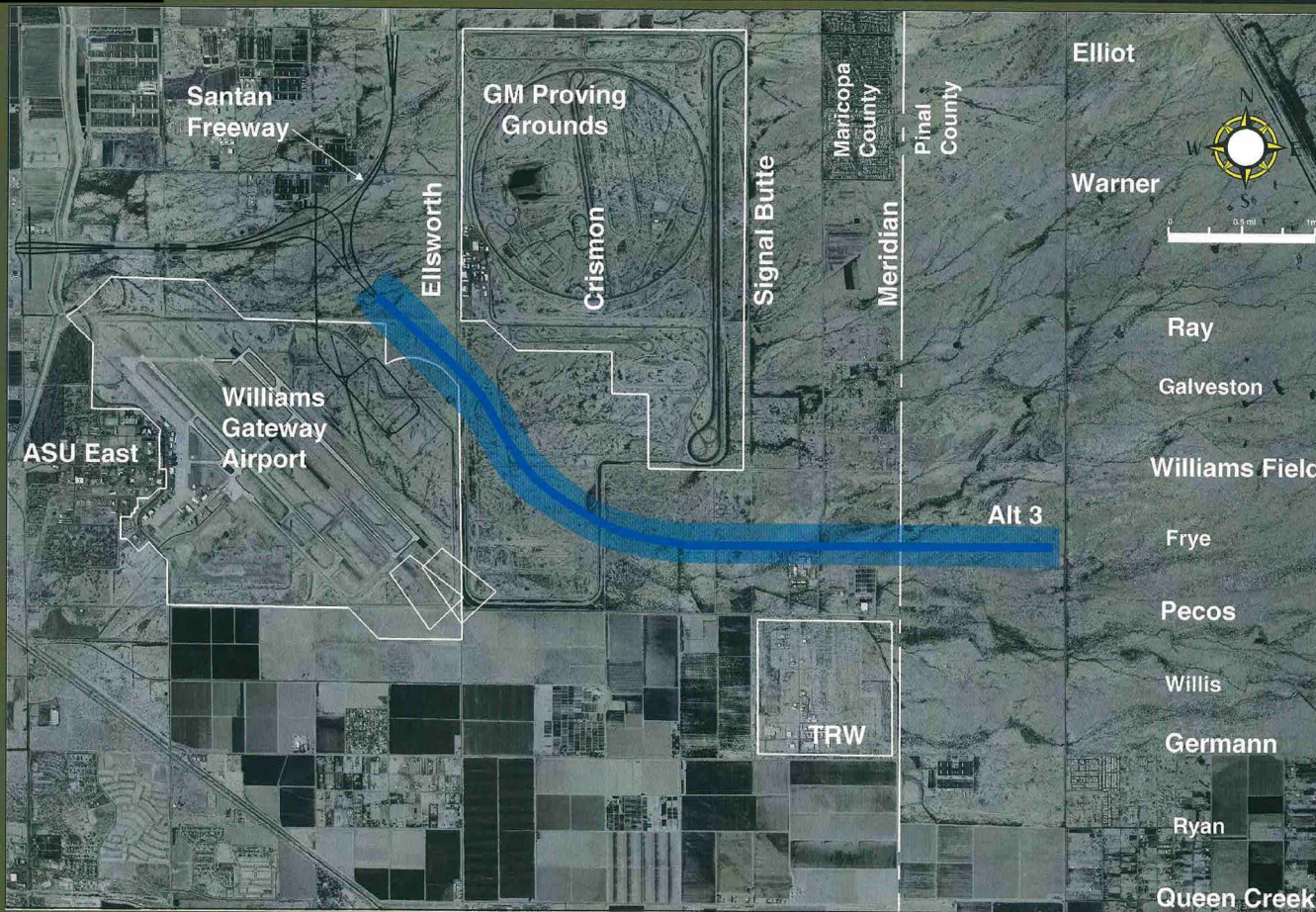
Conclusion

On the basis of the Tier 3 analysis, MAG's consultant recommends Alternative 3 as the preferred alternative, to be carried through the MAG committee and Regional Council review process. The reasons for this recommendation include:

1. The preferred alignment is suitable for a high-capacity, access-controlled facility from the Loop 202 Santan Freeway to the Pinal County line.
2. The preferred alignment will adequately serve the Williams Gateway complex and other key employment centers (existing and projected) within the corridor study area.
3. The alignment is consistent with the generalized corridor depicted in the MAG RTP and endorsed by Maricopa County voters.
4. The alignment achieved the highest score of any alternative in the comprehensive Tier 3 evaluation.
5. The estimated cost of Alternative 3 is within the program budget.
6. This alternative dominates (beats all rivals) more performance measures than the other two alternatives combined—including three of the four cost measures.
7. Alternative 3 also performs the best overall when the matrix is collapsed to show an aggregate score for each of the nine evaluation criteria.
8. Based on conversations with the Arizona State Land Department staff, the alternative strongly supports the expected community and economic development pattern envisioned for the approximately 275-square-mile state land holdings in Pinal County.
9. This alternative is compatible with the planning work that ADOT has done to date on the Williams Gateway Corridor Definition Study in Pinal County.

Figure E-1

Recommended Corridor



Williams Gateway Freeway Alignment and Environmental Overview Study

DMJM HARRIS

1.0 PROJECT OVERVIEW

1.1 Purpose

Beginning in November 2004, the Maricopa Association of Governments (MAG) initiated an Alignment and Environmental Overview Study for the future Williams Gateway Freeway. The purpose of the study is to identify a preferred alignment for the Maricopa County portion of this planned freeway, and to develop detailed information regarding facility characteristics, right-of-way needs, environmental issues, and “environmental justice” concerns under Title VI of the Civil Rights Act of 1964. This information will help guide future adjacent development in the area and provide essential input for Arizona Department of Transportation (ADOT) studies regarding the corridor. ADOT is charged with constructing and operating the MAG regional freeway and expressway system throughout Maricopa County.

1.2 Background

In November 2004, Maricopa County voters approved Proposition 400, which extends for 20 years the existing half-cent excise (sales) tax to fund transportation systems. While a significant portion of the revenue will be devoted to transit and streets, the majority is dedicated to the further expansion and improvement of the MAG regional freeway and highway system. The Williams Gateway Corridor is an integral part of the MAG Regional Transportation Plan (RTP) adopted by the MAG Regional Council in November 2003 and endorsed one year later by voters in connection with their approval of Proposition 400. This proposed freeway will begin at the Santan Freeway (State Route 202L) in the vicinity of Williams Gateway Airport, and then head generally eastward to the Maricopa/Pinal county line at Meridian Road. ADOT is currently conducting a Corridor Definition Study to continue the route eastward through Pinal County to potentially link up with US 60 or some other state route.

The need for a high-capacity, access-controlled facility in this corridor has become increasingly clear due to strong projected growth in the Southeast Valley in the whole, as well as specific development patterns centering on the site of the former Williams Air Force Base. Since the conversion of this approximately 4,400-acre facility to Williams Gateway Airport (WGA), the Williams Education, Research and Training Campus (including ASU Polytechnic), the WGA Business Park and associated uses in 1994, the airport and its environs have been the focus of extensive land and transportation planning efforts. These plans and studies indicate that the area surrounding WGA has the potential to become one of the largest employment centers in the Phoenix Metropolitan Area. For this potential to be realized, however, an effective supporting transportation system must be developed.

Both the Williams Area Transportation Study (1998) and a revision to the Williams Gateway Airport Master Plan (1999) contemplated direct access to the future WGA passenger terminal from a Santan Freeway service interchange near Hawes Road. During the recent preparation of the City of Mesa General Plan Update, however, it

became evident that this concept would do little to enhance freeway access to the planned industrial access east of the airport. Such access is crucial to the long-range development plans and jobs/housing balance of surrounding jurisdictions—especially Mesa (in which WGA is located), but also Gilbert, Queen Creek and Apache Junction. Meanwhile, MAG, the Central Arizona Association of Governments (CAAG), and ADOT completed the Southeast Maricopa/Northern Pinal County Area Transportation Plan. The findings of this study indicated that the area surrounding WGA is a potential major regional employment center, warranting regional level access. In addition, later MAG studies projected that the population of the northeast corner of Pinal County would grow to over 750,000 by 2030. At about the same time, General Motors (GM) announced long-range plans to close its Desert Proving Grounds east of the airport, and sell the property for eventual development into a mix of residential and commercial land uses. However, GM has since decided to continue operating the northern half of the proving grounds for the indefinite future. GM has sold the southern half of the property to a private party who plans to develop the property at a later date.

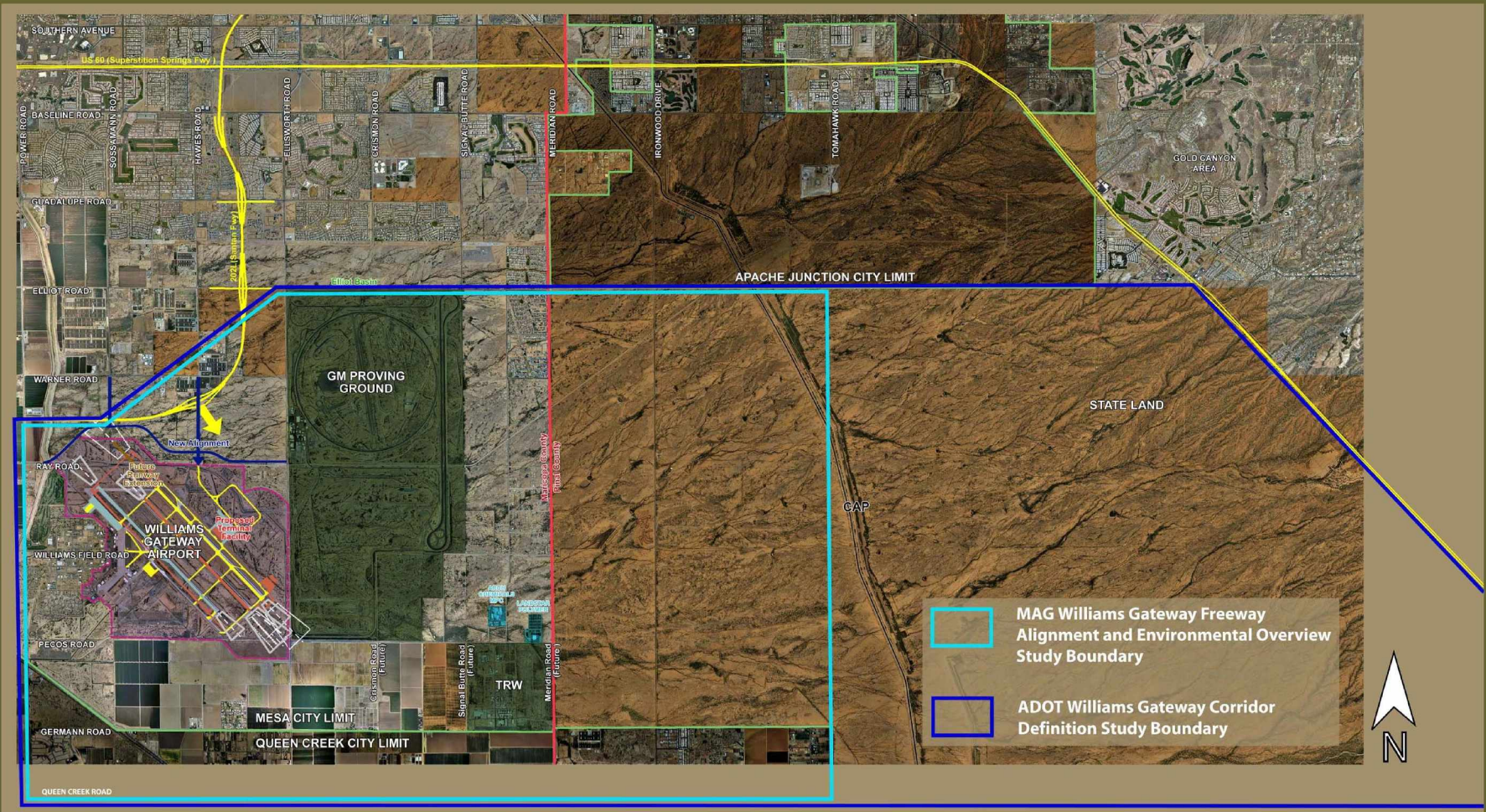
The completion of the Mesa Transportation Plan, the Directional Interchange Evaluation for the Santan Freeway at Hawes Road, and the MAG/CAAG Area Transportation Study led to the conclusion that a freeway corridor extending from the Santan at Hawes Road east into Pinal County is a high regional priority to meet anticipated travel demand. According to the 20-year phased transportation development program incorporated in the MAG RTP, preliminary engineering and right-of-way protection for the Williams Gateway Freeway will occur in Phase I (2005-2010), with funding for final design and right-of-way provided in Phase II (2011-2015). ADOT would construct the Maricopa County portion of the facility during Phase III (2016-2020).

1.3 Study Area

The Williams Gateway Freeway corridor between the Santan Freeway and the Maricopa/Pinal county line is approximately 4 to 6 miles long. The exact length of the facility will depend in part on the alignment selected in this study. The project study area, while remaining somewhat flexible in order to adapt to MAG's needs during the study, is generally bounded by Power Road on the west, Tomahawk Road (three miles east of the county line) on the east, Elliot Road on the north and Queen Creek Road on the south, as Figure 1-1 illustrates. However, the critical flaw (Tier 1) analysis included one alternative extending as far west as Greenfield Road. The study area is extended far enough into Pinal County to permit coordination with the ADOT Pinal County Williams Gateway Corridor Definition Study's feasibility analysis of corridors within that county.

Figure 1-1

Study Boundaries



Williams Gateway Freeway Alignment and Environmental Overview Study

Feb/March 2005
DMJM HARRIS | AECOM

1.4 Project Phasing

The study is organized into two phases. Phase 1, to be completed in July 2005, will result in a recommended preferred alignment for the future Williams Gateway Freeway. Phase 2, scheduled for completion by the end of 2005, will detail the preferred alignment, include an environmental overview, and further assess Environmental Justice/Title VI factors. Public and stakeholder involvement are included throughout the study process. The study is being closely coordinated with the ongoing ADOT Pinal County Williams Gateway Corridor Definition Study, which is examining possible corridors for the eastward continuation of the Williams Gateway Freeway from the Maricopa/Pinal county line to US 60 or some other state route. The recommendations of the MAG Alignment and Environmental Overview Study will be limited to the Maricopa County portion of the Williams Gateway Freeway corridor. However, all alignment alternatives within Maricopa County were evaluated for a reasonable distance into Pinal County (roughly three miles) for critical flaws that may make the alignment unsuitable when extended beyond the Maricopa County line.

1.5 Study Review Team

Early in the process, MAG assembled a Study Review Team (SRT) to provide guidance and input from project stakeholders. The SRT meets approximately monthly throughout Phases 1 and 2, especially at milestones to review key findings. Representatives of the following agencies serve on the SRT:

- City of Mesa
- City of Apache Junction
- Town of Gilbert
- Town of Queen Creek
- Maricopa County (Department of Transportation and Flood Control District)
- Arizona Department of Transportation

2.0 PUBLIC INVOLVEMENT

2.1 Stakeholder Interviews Conducted

Public and stakeholder involvement is critical to the MAG Williams Gateway Freeway Alignment Study. The first phase of the public involvement consisted of a series of stakeholder interviews to uncover issues, concerns, and possible alignment suggestions. The information collected was used to develop the range of alignment alternatives, alternative implications, and evaluation criteria. As Table 2.1 indicates, 18 groups of stakeholders were interviewed from December 6, 2004 through February 11, 2005.

Table 2.1: Stakeholder Interviews

Date	Stakeholding Agency or Organization	Participating Individuals
December 6, 2004	Town of Queen Creek	Mayor Wendy Feldman-Kerr Cynthia Seelhammer, Town Manager John Kross, Assistant Town Manager
December 7, 2004	City of Mesa Utilities	David Plumb, Utilities Manager
December 7, 2004	City of Mesa Public Safety	Dennis Donna, Chief of Police Bryan Kostner, Fire Operations Gary Bradbury, Assistant Fire Chief
December 7, 2004	Mesa Mayor and Council	Mayor Keno Hawker Janie C. Thom, District 6 Councilmember Heidi Gast, Assistant to the Mayor Wayne Balmer, Williams Gateway Project Manager
December 9, 2004	Pinal County	Sandie Smith, Board of Supervisors District 2 Ken Buchanan, Assistant County Manager Bob Davis, Director Public Works (now retired) Doug Hansen, Planning Section Chief, Public Works David Kuhl, Planning & Development Greg Stanley, Director of Public Works Dianne Kresich, ADOT
December 10, 2004	Mesa Transportation and Planning Staff	Wayne Balmer, Williams Gateway Project Manager Tom Ellsworth, Planning Jeff Kramer, Transportation Jeff Martin, Development Services Keith Natt, Engineering Ross Renner, Transportation John Pein, ADOT
December 15, 2004	Salt River Project	Mike Jones, Manager Customer Service & System Improvements Systems/Municipal Tom Olivas, Senior Engineer Distribution Planning Jerry Ulfers, Manager Customer & System Improvements Greg Wilson, Assistant Project Manager, ADOT Andy Smith, ADOT
December 15, 2004	Maricopa County Transportation and Flood Control	John Lynch, MCDOT Tim Oliver, MCDOT Mike Sabatini, MCDOT Felicia Terry, Flood Control District Andy Smith, ADOT

Table 2.1: Stakeholder Interviews (continued)

Date	Stakeholding Agency or Organization	Participating Individuals
December 15, 2004	Property Owners and East Valley Partnership	Roc Arnett, EVP Carson Brown, Vanderbilt Ryan Cochran, Kitchell Development Brent Moser, Grubb & Ellis Kevin Petersen, Vanderbilt Mark Sleeth, Kitchell Development Barry Zemell, Outer Ring LLC
December 16, 2004	Williams Gateway Airport and Property Owners	Wayne Balmer, City of Mesa Casey Denny, WGAA James Harriman, GRIC Retail DPS Terry Isaacson, ASU East (now Polytechnic) Lynn Kusy, WGAA Dave Porter, GRIC Toka Sticks Golf Course John Schroeder, CGCC Larry Stephenson, GRIC Dean Weatherly, GRIC Economic Development Mike Williams, WGAA
December 16, 2004	City of Apache Junction	Mayor Douglas Coleman Vice Mayor R.E. Eck, Jr. George Hoffman, City Manager Bryant Powell, Assistant City Manager Amy Mallery, Assistant to the City Manager Rudy Esquivias, Community Development Director Ron Grittmann, Public Works Director Andy Smith, ADOT
December 17, 2004	City of Mesa Management	Mike Hutchinson, City Manager Jack Friedline, Assistant Manager Jim Huling, Assistant Manager Paul Wenbert, Assistant Manager Wayne Balmer, Williams Gateway Project Manager
December 20, 2004	Town of Gilbert	Tami Ryall, Deputy Manager Mike Molillo, Transportation
December 20, 2004	GM Desert Proving Grounds	Roc Arnett, EVP Chuck Backus, EVP, ASU Research Park Steve Chucuri, Chucuri Consulting (on behalf of GM) Andrew M. Cohn for Bill Levine, Pacific Proving LLC Paul Gilbert, Beus Gilbert
January 7, 2005	TRW	John M. Fry, Plant Manager, Mesa Operations Tom Kendall, Controller, Mesa Operations Jeffrey A. Mierth, Environmental Manager Will C. Rogers, Facilities Engineering Manager
January 18, 2005	Arizona State Land Department	Luana Capponi, State Land Department Andy Smith, ADOT

Table 2.1: Stakeholder Interviews (continued)

Date	Stakeholding Agency or Organization	Participating Individuals
February 1, 2005	Landowners in Study Area	Chuck Backus, EVP Wayne Balmer, City of Mesa Jason Barney, Circle G Properties Russ Brandt Carson Brown Steve Chucuri, GM Desert Proving Grounds Ryan Cochran, Kitchell Doug Cook Jim Creedon, Landry Creedon Associates Casey Denny Len Fuchs J. Garrido, CGCC Marcus Gutierrez Terry Isaacson, ASU East (now Polytechnic) Gerald Jakubowsky, ASU East (now Polytechnic) Billy Maynard Nora Maynard Anthony Mormino Jim Nelson, Salt River Project Darra Rayndon Lyle Richardson Casmer Ruzyski Bruce Scharbach, CGCC Gene Slechta Andy Smith, ADOT Keith Zeiler
February 11, 2005	Fuji Film	Scott Klamm, Site Manager Mary Clark, Environmental/Health & Safety Manager

Abbreviations

ADOT = Arizona Department of Transportation
 ASU = Arizona State University
 CGCC = Chandler Gilbert Community College
 EVP = East Valley Partnership
 GM = General Motors
 GRIC = Gila River Indian Community
 MCDOT = Maricopa County Department of Transportation
 WGAA = Williams Gateway Airport Authority

Source: MAG/Consultant Team

During the interviews, the MAG/Consultant Team (MAG project manager and consultants) identified a number of issues and concerns that many of the stakeholders hold in common. There were also several issues on which stakeholders have differing views. Both the common themes and the divergent viewpoints are listed below. These are not all the topics that were raised, but represent some of the more salient issues.

Common Themes

- Protection and enhancement of the employment opportunities at Williams Gateway Airport is critical
- Ensuring adequate connections or access to Williams Gateway Airport
- Interchange at Ellsworth Road
- Freeway alignment should be at the half mile street location (preserving arterial street continuity)
- Supportive arterial street network should be addressed
- The potential development and timing of Arizona State Land Department (ASLD) trust lands will have an impact on the alignment
- Drainage and flood control issues throughout the area must be addressed
- The pace of development occurring in this area is important to address in the modeling effort
- The eventual development of GM Desert Proving Grounds will impact the alignment
- Geopolitical structure (e.g., annexations) of the area (i.e., ASLD land) is a concern
- Alignment should not provide easy sight-lines into the GM Desert Proving Grounds
- Support to local land use plans

Divergent Viewpoints

- Preferred alignment for the Williams Gateway Freeway. Opinions range from Ray Road to Germann Road
- Locations for interchanges
- Appropriate land uses to the east of GM Desert Proving Grounds
- Future disposition of the ASLD state trust lands
- Designation of north/south corridors
- Responsibility for flood control and drainage issues

2.2 Public Open House

A public open house was held on March 24, 2005 from 6:00 to 8:00 p.m. at the ASU Polytechnic Student Union Ballroom. The purpose of this meeting was to apprise the community of the purpose and status of the Williams Gateway Alignment and Environmental Study, to answer questions, and to solicit comments on study issues. Attendees were able to view maps and other displays, and to ask questions of individual staff members. There was also a brief presentation and a formal question-and-answer period. In addition, input regarding the project and the various alternatives was submitted on comment cards distributed to all who attended. Staff members from the ADOT Williams Gateway Corridor Definition Study were also present.

After receiving input from the stakeholder interviews and the public open house, several informal meetings were held with Mesa, Queen Creek, Maricopa County and ADOT. These meetings were held to further discuss the evaluation process and review data and other findings from the analysis of alternatives. As a result of these sessions, performance measures were adjusted and the findings from the evaluation process were refined.

3.0 TIER 1 (CRITICAL FLAW) ANALYSIS

Several conceptual freeway corridors were eliminated at the outset of the study because of flaws so significant as to preclude further consideration in this project. Each of the following characteristics was defined as a “critical flaw” sufficient to rule out a proposed corridor:

1. Inconsistency with the MAG RTP, as adopted by the MAG Regional Council of elected officials and then endorsed by Maricopa County voters. The RTP specifies the approximate location of each planned regional facility, including the Williams Gateway Freeway. Any location inconsistent with the RTP is considered critically flawed. In addition, the revenue stream to be generated by the half-cent sales tax will have to meet a variety of transportation needs countywide. Therefore, an alternative whose cost greatly exceeds the amount budgeted in the RTP is also critically flawed.
2. Inconsistency with adopted plans and policies (including the current General Plans) of host local jurisdictions.
3. Interference with the mission and operations of Williams Gateway Airport, which are crucial to the regional economy and the stakeholders involved in this study.
4. Unacceptable impacts on existing land uses and economic activities, such as the Williams Gateway complex, the GM Desert Proving Grounds, other major employers in the area, and established residential communities.

The three generalized corridors considered in the Tier 1 evaluation are illustrated in Figure 3-1 and evaluated in Table 3.1. All of them begin at the Santan (SR 202L) Freeway. As shown in Table 3.1, two of the three—Greenfield and Hawes 1--have one or more critical flaws, and are therefore eliminated from consideration at this point. The Greenfield corridor was removed from further consideration because of inconsistency with the RTP and local plans, and its unacceptable land use impacts. The Hawes 1 corridor was eliminated because of its interference with the Williams Gateway Airport, and unacceptable land use and economic impacts. The Hawes 2 corridor was recommended for further consideration. The Hawes 2 corridor encompasses seven distinct alignment alternatives, which are described and evaluated in the next chapter on Tier 2.

Figure 3-1

Tier 1 System Corridors

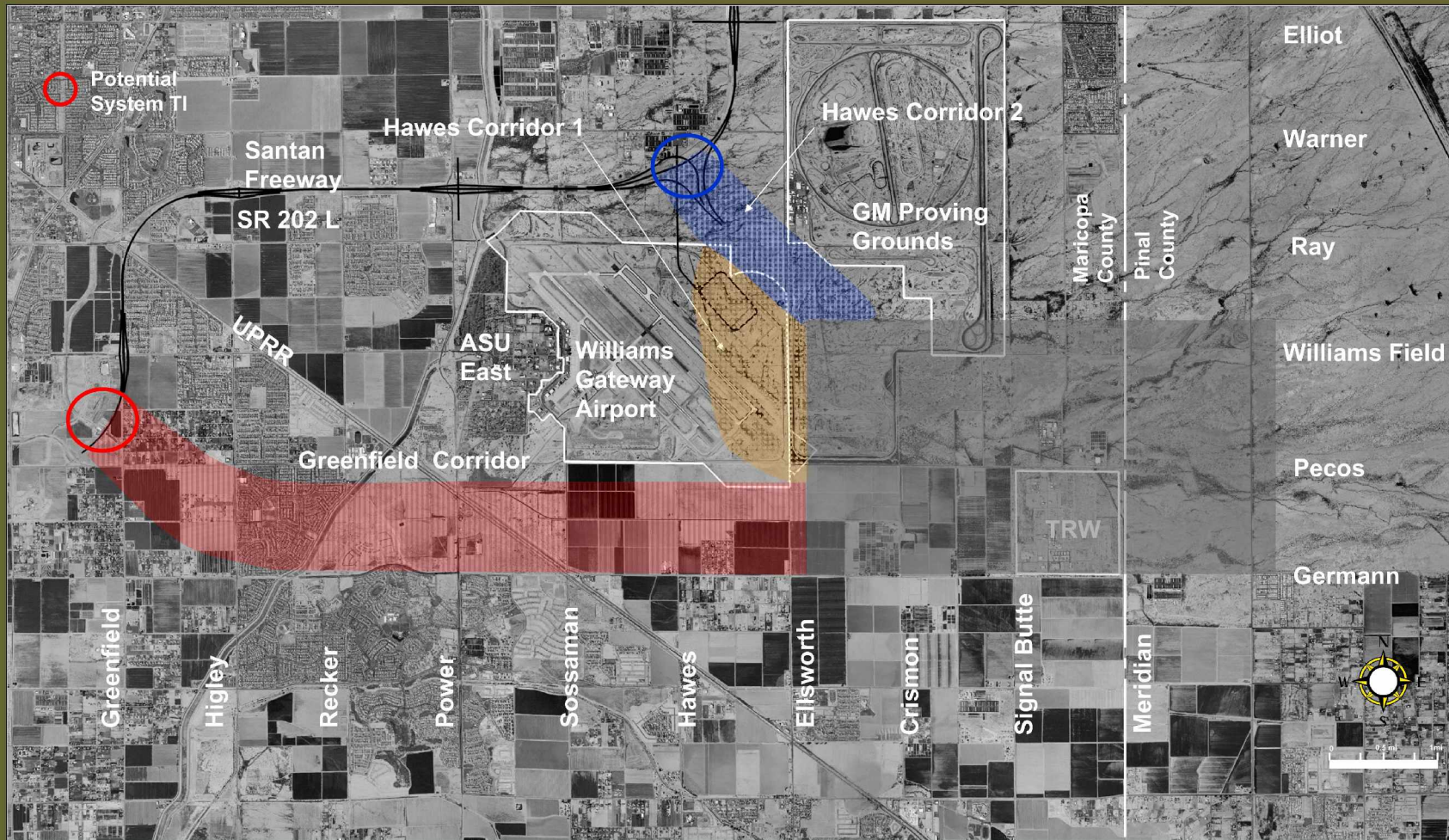


Table 3.1: Tier 1 (Critical Flaw) Corridor Evaluation Matrix

Corridor	Criteria				Conclusion
	Consistency with RTP	Inconsistency with local plans	Williams Gateway Airport Interference	Unacceptable land use or economic impacts	
Greenfield (diverges east at Greenfield Road)	Not consistent with connection to SR 202 shown in RTP, & prohibitive cost due to excessive length of new freeway construction required	Inconsistent with Gilbert & Mesa General Plans	No critical flaw	Unacceptably disrupts established neighborhoods	Remove from further consideration: Inconsistent with RTP Inconsistent with local plans Unacceptable land use impacts
Hawes 1 (diverges south at Hawes Road)	No critical flaw	No critical flaw	Interferes with Williams Gateway Airport operations without a cost-prohibitive solution such as tunneling (which raises security issues)	Likely unacceptable impacts on land uses & economic activities within Williams Gateway complex	Remove from further consideration: Airport interference Unacceptable land use & economic impacts
Hawes 2 (diverges southeast at Hawes)	No critical flaw	No critical flaw	No critical flaw	No critical flaw	Carry forward and evaluate refined options in Tier 2

Source: MAG/Consultant Team

4.0 TIER 2 EVALUATION

4.1 Alternatives Considered

The Hawes 2 corridor generated seven specific alignments for consideration in Tier 2 of the evaluation, as illustrated in Figure 4-1:

Alternative 1: Begins at a new system interchange with SR 202 just east of Hawes Road, where SR 202 curves to change direction from east-west to north-south; proceeds generally southeast across the northeast corner of the Williams Gateway Airport property; then continues due east along the Galveston Street alignment to Meridian Road.

Alternative 2: Begins like Alternative 1, but turns east along Williams Field Road, one-half mile farther south, and continues due east to Meridian Road.

Alternative 3: Begins like Alternative 2, but turns east along the Frye Road alignment, one-half mile farther south.

Alternative 4: Begins like Alternative 3, but turns east along Pecos Road, one-half mile farther south.

Alternative 5: Begins like Alternative 4, but turns east along the Willis Road alignment, one-half mile farther south.

Alternative 6: Begins like Alternative 5, but turns east along Germann Road, one-half mile farther south.

Alternative 7: Begins like Alternative 6, but turns east along the Ryan Road alignment, midway between Germann Road and Queen Creek Road.

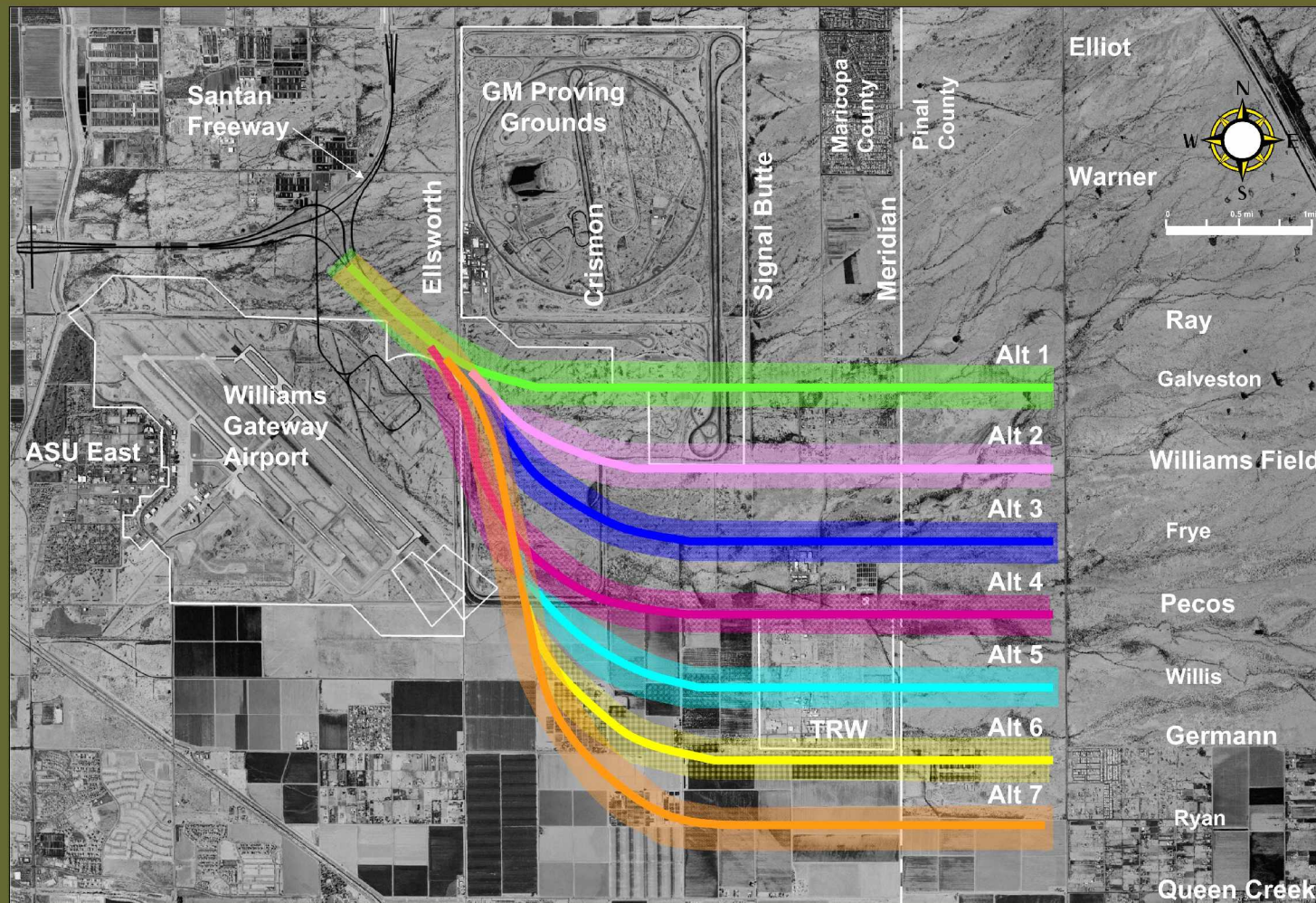
4.2 Tier 2 Evaluation

The evaluation criteria are listed across the top of Table 4.1, the Tier 2 evaluation matrix. These criteria consist of:

1. *Economic Development*
 - Sustains existing employers
 - Supports economic activity centers
2. *Consistency with Community Plans*
3. *Transportation Service*
 - Access to Williams Gateway Airport
 - Compatibility with planned arterial system

Figure 4-1

Tier 2 Corridors



Williams Gateway Freeway Alignment and Environmental Overview Study

Feb/March 2005
DMJM HARRIS | AECOM

4. *Environmental Compatibility (Natural/Physical/Human)*

5. *Cost Minimization*

- Estimated length of alignment
- Number of traffic interchanges

6. *Pinal County Considerations*

Tier 2 is an intermediate phase of the evaluation process and uses a broad brush to remove those alternatives that are clearly less desirable than others. Therefore, the alternatives are rated non-quantitatively on each criterion as “High,” “Medium” or “Low.” The criteria have been formulated so that “High” always means most desirable and “Low” least desirable. The right-hand column of Table 4.1 summarizes conclusions of the Tier 2 analysis. Alternatives 1, 2, 4 and 6 were recommended for elimination at this point. In general, these alternatives were removed from further consideration because of factors such as alignments falling on major mile arterials and/or undesirable economic and environmental impacts. Alternatives 3, 5 and 7 were retained for further evaluation in Tier 3.

4.3 Investigation of “Super Street” or “Parkway” Options

As an outgrowth of the fundamental task of identifying a preferred alignment for the planned Williams Gateway Freeway (WGF) in Maricopa County, several stakeholders were interested in investigating some options for a super street or parkway at a broad, conceptual level. The purpose of such a facility would be to provide enhanced connections between the WGF and rapidly growing commercial and residential areas of Queen Creek to the south. The super street/parkway options were developed assuming Alternative 3 (Frye Road alignment) as the base alternative. The investigation of these options is attached as Appendix A.

4.4 Continuation to Ironwood Drive

As part of the study process, it was determined that the WGF should continue into Pinal County to Ironwood Drive, one mile east of the Maricopa County line in order to establish a link into Pinal County. Ironwood Drive is planned as a major north-south corridor that would feed the WGF from rapidly growing areas of Pinal County to the south. This extension would need to be accomplished with funding from sources other than MAG RTP/Proposition 400 revenue. Issues of logical termini and continuation into Pinal County will be further addressed in subsequent ADOT studies, and as part of the Design Concept Report (DCR) and National Environmental Policy Act (NEPA) process.

Table 4.1: Tier 2 Corridor Alternatives Evaluation Matrix

Alter-natives	Criteria ¹								Conclusions
	Economic Development		Consistency with Currently Adopted Mesa and Queen Creek General Plans	Transportation Service		Environmental Compatibility ²	Cost Minimization	Pinal County Considerations ³	
	Sustains major existing employers	Supports long-term growth of Williams Gateway economic activity center ⁴		Local access, including access to airport ⁵	Compatibility with planned arterial system	Natural, Physical, Human	Estimated length (<4.5 miles = “High”) (4.5-5.5 mi = “Medium”) (>5.5 mi = “Low”)		
1	Low (requires R/W from GM Desert Proving Grounds & removes N/S test track)	Medium (primarily serves Mesa portion of Williams Gateway economic activity center)	Medium (less compatible with residential than with employment land use in Mesa)	Low	High (compatible with future grid network)	Low (impacts 4 domestic water production wells, 1 stock water production well & 1 test well; impacts major wash feature & 100-year floodplain east of county line in study area)	High (4.0 miles)	Medium	Consultant recommends remove from further consideration. Substantial environmental & economic (GM Desert Proving Grounds) impacts; relatively little airport access
2	Medium (requires some R/W from GM Desert Proving Grounds, but preserves N/S test track)	Medium (primarily serves Mesa portion of Williams Gateway economic activity center)	High (consistent with Mesa General Plan)	Low	Low (takes arterial alignment: Williams Field Rd)	Low (impacts 4 domestic water production wells, a major wash feature, & a 100-year floodplain east of county line in study area; adjacent hazardous materials)	High (4.25 miles)	High	Consultant recommends remove from further consideration. Incompatible with planned arterial street system; substantial environmental impacts
3	High (no notable impacts)	High (provides balanced high-capacity travel within Williams Gateway economic activity center)	High (consistent with Mesa General Plan)	Medium	High (compatible with future grid network)	Medium (impacts 1 domestic water production well & a major wash feature in Maricopa County; adjacent hazardous materials)	Medium (4.5 miles)	High	Consultant recommends retain for Tier 3. Performs generally well at Tier 2 level at analysis
4	Medium (minor impact to Fuji Film & CRMA tire recycling plant access)	High (provides balanced high-capacity travel within Williams Gateway economic activity center)	High (consistent with Mesa General Plan)	Medium	Low (takes arterial alignment: Pecos Rd)	Medium (impacts 1 monitor well, 1 municipal water production well & a major wash feature in Maricopa County; adjacent hazardous materials)	Medium (5.0 miles)	Medium	Consultant recommends remove from further consideration. Incompatible with planned arterial street system

Table 4.1: Tier 2 Corridor Alternatives Evaluation Matrix (continued)

Alter-natives	Criteria ¹							Conclusions	
	Economic Development		Consistency with Currently Adopted Mesa and Queen Creek General Plans	Transportation Service		Environmental Compatibility ²	Cost Minimization		Pinal County Considerations ³
	Sustains major existing employers	Supports long-term growth of Williams Gateway economic activity center ⁴		Local access, including access to airport ⁵	Compatibility with planned arterial system	Natural, Physical, Human	Estimated length (<5.5 miles = “High”) (5.5-6.5 mi = “Medium”) (>6.5 mi = “Low”)		
5	Medium (requires R/W from TRW, although in a manner consistent with its long-range property disposition plans)	High (provides balanced high-capacity travel within Williams Gateway economic activity center)	High (consistent with Mesa General Plan)	Medium	High (compatible with future grid network)	Medium (impacts 2 irrigation production wells, 1 municipal production well, 1 abandoned geotech boring, & a major wash feature & 100-year floodplain)	Medium (5.5 miles)	Medium	Consultant recommends retain for Tier 3. Performs generally well at Tier 2 level of analysis
6	Medium (minor impact to TRW access)	Medium (primarily serves Queen Creek portion of Williams Gateway economic activity center)	High (consistent with Mesa and Queen Creek General Plans)	High	Low (takes arterial alignment: Germann Rd)	Low (impacts 12 production wells: 2 industrial, 5 irrigation, 3 stock, 1 domestic & 1 municipal; also a known cultural site & a 100-year floodplain)	Low (5.75 miles)	Low	Consultant recommends remove from further consideration. Incompatible with planned arterial street system; substantial environmental impacts
7	High (no notable impacts)	Medium (primarily serves Queen Creek portion of Williams Gateway economic activity center)	Medium (less compatible with residential than with employment land use in Queen Creek)	High	High (compatible with future grid network)	Low (impacts 3 irrigation production wells, a known cultural site, & creates noise & visual concerns near existing residences)	Low (6.0 miles)	Low	Consultant recommends retain for Tier 3. Performs generally well at Tier 2 level despite length, environmental impacts & impacts to existing land uses in Pinal County

Notes

¹Rating scale: “High” = most desirable
 “Medium” = intermediate in desirability
 “Low” = least desirable

²Evaluation denotes only potential impacts to existing or known natural, physical, or human considerations. Other considerations, such as additional cultural sites in those areas not currently surveyed, could arise during future detailed studies.

³Likelihood of supporting planned community growth & potential activity center development at centralized location within ASLD lands; impacts to existing development.

⁴Based on proximity to central economic development area associated with airport, as identified in Mesa & Queen Creek General Plans.

⁵Based on length of freeway frontage.

Source: MAG/Consultant Team

5.0 TIER 3 EVALUATION

In Tier 3, the MAG/Consultant Team conducted a much more comprehensive evaluation of the three remaining alternatives: 3, 5 and 7 (see Figure 5-1). The number of criteria was increased from eight in Tier 2 to nine in this phase of the evaluation. Most important, each criterion was subdivided into performance measures. The criteria represent the basic elements by which the effectiveness of a major freeway facility can be determined. The performance measures are specific tools designed to ascertain how well each alternative satisfies the criteria. Some performance measures, such as those relating to traffic volumes, cost, and some environmental factors, are quantifiable—i.e., they depend on data that can be directly counted or measured. Others, including consistency with adopted plans and many environmental elements, are not amenable to a quantitative approach. These were assessed qualitatively, using the best professional judgment of the MAG/Consultant Team. All of the criteria and performance measure definitions received advance review and concurrence from the Study Review Team.

As in Tier 2, a three-point rating scale was used, with “Most Desirable” the highest rating and “Least Desirable” the lowest. The intermediate rating was defined as “Less Desirable.” Criteria and performance measures were not weighted; because of their variety and complexity, it was felt that any attempt to assign specific weights to each performance measure could be arbitrary and not aid the decision-making process. It must be acknowledged, however, that cost has special importance because of the funding level identified for this corridor in the MAG RTP.

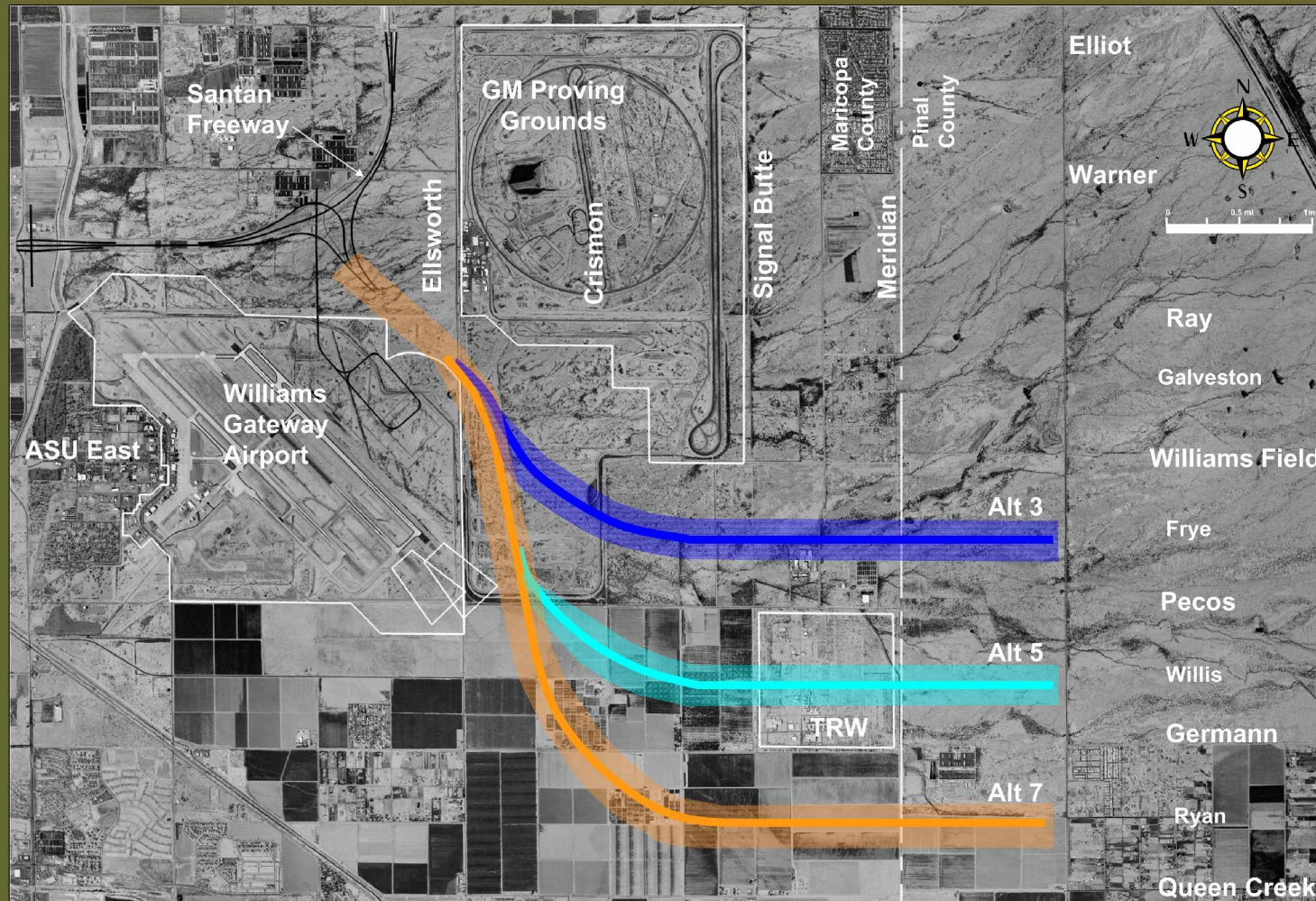
5.1 Evaluation Criteria

The Tier 3 evaluation criteria are as follows:

- **Mobility**—relates to the fundamental purpose of an access-controlled, high-capacity facility: to efficiently move large volumes of people and goods. Specific performance measures address forecast usage (per mile) of the freeway facility and the projected number of congested intersections in the project area.
- **Safety**—relates to the importance of minimizing incidents that cause injury or property damage. The single performance measure is based on the proportion of traffic occurring on high-capacity, access-controlled facilities, which are known to be safer than arterials.
- **General Plan Consistency**—relates to the importance of coordinated long-range planning for growth, by showing the degree to which each alternative is consistent with the adopted General Plans and other relevant planning documents of study area jurisdictions (primarily the City of Mesa and Town of Queen Creek). Three aspects of the General Plans are evaluated: the land use, circulation and economic development elements.

Figure 5-1

Tier 3 Draft Corridors



Williams Gateway Freeway Alignment and Environmental Overview Study

Feb/March 2005
DMJM HARRIS | AECOM

-
- **Access**—represents the effectiveness with which an alternative provides access to people, jobs and facilities in its service area. The performance measures reflect projected future population and employment near a potential freeway interchange, as well as the availability of direct access to the Williams Gateway Complex.
 - **Natural Environment**—compares the impacts of alternatives on key elements of the natural environment that they would traverse. Specific performance measures address key drainageways (Waters of the United States), floodplains, species and their habitats, air quality and the visual environment.
 - **Physical Environment**—compares the impacts of alternatives on key elements of the physical environment as shaped or altered by humans. Cultural resources, recreational land uses (potentially subject to Section 4(f) or 6(f) of the U.S. Department of Transportation Act), hazardous materials and farmlands are included.
 - **Socioeconomic Impacts**—compares the impacts of alternatives on key elements of the social and economic environment of the project area, such as neighborhood cohesion, adjacent developed properties, and Environmental Justice concerns under Title VI of the federal Civil Rights Act.
 - **Estimated Cost**—compares various costs of each alternative at a planning level of analysis: capital cost, additional right-of-way cost, operating and maintenance cost, and expected cost of potential environmental mitigations.
 - **Pinal County Considerations**—although the MAG Williams Gateway Freeway Alignment Study focuses on the relative merits of alternatives within Maricopa County, this criterion recognizes the need to consider factors related to continuity with the proposed future extension of the corridor into Pinal County. These elements consist of potential direct impacts on natural drainageways and existing land use, along with potential visual and noise impacts to existing uses.

5.2 Tier 3 Evaluation Matrix

Table 5.1 provides the full evaluation matrix used in Tier 3. The first two columns list the evaluation criteria and the performance measures used for each criterion. The next three columns show summary evaluation results for Alternatives 3, 5 and 7. A “Most Desirable” rating is represented by a filled-in circle, a “Less Desirable” rating by a partially filled-in circle, and a “Least Desirable” rating by an empty circle. The final column describes the approach that was used to measure each aspect of performance.

The MAG/Consultant Team consistently attempted to rate one alternative as Most Desirable, a second as Less Desirable and the third as Least Desirable—so long as there were sufficient differences between the three alternatives’ performance to justify this procedure. For twelve of the 32 measures, however, there was no substantial difference between two of the alternatives, which therefore received identical ratings. For nine others, all three alternatives were rated the same. Seven of these performance measures relate to environmental issues. These were not necessarily expected to reveal clear differences between alternatives, but were considered worthy of inclusion because of their future importance in the National Environmental Policy Act (NEPA) process required of projects receiving federal funds.

Table 5-1: Williams Gateway Freeway Alignment Study-Tier 3 Matrix
June 7, 2005

●=Most Desirable ◐=Less Desirable ○=Least Desirable

Criteria	Performance Measures	Alternative			Measurement Approach
		3	5	7	
Mobility	Daily usage of Williams Gateway Freeway--year 2026	● 128,200	◐ 124,400	○ 121,700	Weekday freeway VMT per mile of freeway mainline (Hawes Rd to Meridian Rd). Source: MAG traffic model output. More VMT = greater arterial relief = better performance.
	Number of congested major intersections—year 2026	● 1 (Ray/Hawes)	● 1 (Ray/Hawes)	● 1 (Ray/Hawes)	Number of arterial/arterial intersections (in area bounded by Ray, Ocotillo, Hawes & Meridian Roads) with forecast 2026 peak hour LOS of E or F. Source: MAG traffic model output using Highway Capacity Manual methodology. Fewer congested intersections = better performance.
Safety	Proportion of VMT occurring on safer (high-capacity) facilities	◐ 42%	◐ 43%	● 45%	Percent of weekday VMT (in area generally bounded by US 60, Hunt Highway, Power Rd & Meridian Rd) occurring on freeway. Higher percentage = reduced crash frequency & severity = greater safety.

Table 5-1: Williams Gateway Freeway Alignment Study-Tier 3 Matrix
June 7, 2005 (continued)

Criteria	Performance Measures	Alternative			Measurement Approach
		3	5	7	
General Plan Consistency (at community build out)	Consistency with land use element in adopted General Plan	● Freeway corridor lies within planned business, industrial or mixed use areas.	● Freeway corridor lies within planned business, industrial or mixed use areas.	● Freeway corridor lies within planned business, industrial or mixed use areas.	Overall consistency with adopted General Plan land use element of applicable jurisdiction.
	Consistency with circulation element in adopted General Plan	● Minor impacts to existing arterial grid system. Surrounding arterial streets north & south of the freeway alignment have planned improvements to help move traffic to & from freeway.	◐ Minor impacts to existing arterial grid system. Surrounding arterial streets north of the freeway alignment have planned improvements to help move traffic to & from freeway.	○ Minor impacts to existing arterial grid system. Few improvements are planned for the surrounding arterial streets to help move traffic to & from freeway.	Overall consistency with adopted General Plan circulation element (& stand- alone transportation plans) of applicable jurisdiction.
	Consistency with economic development element in adopted General Plan	◐ Located within the northern portion of Williams Gateway regional economic activity center.	● Centrally located within the Williams Gateway regional economic activity center.	◐ Located within the southern portion of Williams Gateway regional economic activity center.	Overall consistency with adopted General Plan economic development elements (& stand-alone economic development plans) of applicable jurisdiction.

Table 5-1: Williams Gateway Freeway Alignment Study-Tier 3 Matrix
June 7, 2005 (continued)

Criteria	Performance Measures	Alternative			Measurement Approach
		3	5	7	
Access	Population within immediate Williams Gateway Freeway travel shed (2016)	● 3,400	○ 3,240	● 3,850	Projected population per mile within 2 miles of Williams Gateway Freeway interchanges. Source: MAG socioeconomic projections. Greater population served = better performance.
	Population within immediate Williams Gateway Freeway travel shed (2026)	○ 5,580	● 5,965	● 7,020	Same as above
	Employment within immediate Williams Gateway Freeway travel shed (2016)	● 6,135	● 5,510	○ 4,850	Projected employment per mile within 2 miles of Williams Gateway Freeway interchanges. Source: MAG socioeconomic projections. Greater employment served = better performance.
	Employment within immediate Williams Gateway Freeway travel shed (2026)	● 10,155	● 9,800	○ 8,815	Same as above
	Access to Williams Gateway Complex	● 2 (Ellsworth, Williams Field)	● 3 (Ellsworth, Williams Field, Crismon)	● 3 (Ellsworth, Williams Field, Pecos)	Number of Williams Gateway Freeway interchanges directly serving the Williams Gateway Complex. More interchanges = better access.

Table 5-1: Williams Gateway Freeway Alignment Study-Tier 3 Matrix
June 7, 2005 (continued)

Criteria	Performance Measures	Alternative			Measurement Approach
		3	5	7	
Natural Environment	Waters of the United States	<p>●</p> <p>Would impact 3 jurisdictional waters of the U.S. within Maricopa County.</p>	<p>●</p> <p>Would impact 3 jurisdictional waters of the U.S. within Maricopa County.</p>	<p>●</p> <p>Would impact 3 jurisdictional waters of the U.S. within Maricopa County.</p>	Number of jurisdictional waters impacted, based on existing documentation.
	100-year floodplains	<p>●</p> <p>No projected impacts to 100-year floodplains</p>	<p>●</p> <p>No projected impacts to 100-year floodplains</p>	<p>●</p> <p>No projected impacts to 100-year floodplains</p>	Number of delineated floodplains crossed, based on existing documentation. Fewer crossings = better performance.

Table 5-1: Williams Gateway Freeway Alignment Study-Tier 3 Matrix
June 7, 2005 (continued)

Criteria	Performance Measures	Alternative			Measurement Approach
		3	5	7	
Natural Environment (continued)	Species & habitats	<p>●</p> <p>No Critical Habitat. Potential for 2 listed species (CFPO, long-nosed bat) & one candidate species (Acuna cactus). Likely habitat for several state sensitive species.</p>	<p>●</p> <p>No Critical Habitat. Potential for 2 listed species (CFPO, long-nosed bat) & one candidate species (Acuna cactus). Likely habitat for several state sensitive species.</p>	<p>●</p> <p>No Critical Habitat. Potential for 2 listed species (CFPO, long-nosed bat) & one candidate species (Acuna cactus). Likely habitat for several state sensitive species.</p>	Estimated impact based on existing documentation.
	Air quality	<p>●</p> <p>12,000</p>	<p>●</p> <p>11,800</p>	<p>●</p> <p>11,800</p>	Future 2026 weekday hours of delay on freeway mainline. Source: MAG traffic model output. Less delay = better air quality.
		<p>○</p> <p>17,800</p>	<p>●</p> <p>17,100</p>	<p>●</p> <p>16,200</p>	Future weekday hours of delay on arterials in area bounded generally by US 60, Hunt Hwy, Power Rd & Meridian Rd. Source: MAG traffic model output. Less delay = better air quality.

Table 5-1: Williams Gateway Freeway Alignment Study-Tier 3 Matrix
June 7, 2005 (continued)

Criteria	Performance Measures	Alternative			Measurement Approach
		3	5	7	
Natural Environment (continued)	Visual	● Potentially impacted residences.	● No apparent direct impact to foreground or distant views.	● No apparent direct impact to foreground or distant views.	Qualitative assessment of directional miles of new freeway frontage adjacent to existing residential communities. Fewer miles = less impact = better performance.
	Noise	● Potentially impacted residences.	● No apparent direct noise impacts.	● No apparent direct noise impacts.	Qualitative assessment of linear miles of corridor centerline within 0.25 miles of existing residences or other sensitive receivers. Fewer miles = less impact = better performance.
Physical Environment	Cultural resources	● No known cultural sites impacted.	● No known cultural sites impacted.	○ Impacts 1 large cultural site.	Number of historic & prehistoric sites impacted, based on site records.
	Recreational land uses	● No apparent 4(f) or 6(f) impacts.	● No apparent 4(f) or 6(f) impacts.	● No apparent 4(f) or 6(f) impacts.	Potential impact on existing & planned 4(f) & 6(f) resources, based on existing documentation.

Table 5-1: Williams Gateway Freeway Alignment Study-Tier 3 Matrix
June 7, 2005 (continued)

Criteria	Performance Measures	Alternative			Measurement Approach
		3	5	7	
Physical Environment	Hazardous materials	○ RCRA & EPA toxic release site within proximity (Fuji Film), drywells at Fuji Film	○ RCRA & EPA toxic release site within proximity (TRW), ADWR well	● ADWR well	Disturbance of existing & suspected hazmat sites, based on existing documentation. Fewer sites = better performance.
	Farmlands	● Existing agricultural land zoned for other land uses.	● Existing agricultural land zoned for other land uses.	● Existing agricultural land zoned for other land uses.	Impacts to Prime & Unique Farmland, based on existing documentation.
Socioeconomic Impacts	Title VI/Environmental Justice	◐ Potential direct impact to sensitive populations.	● No apparent disproportionate impacts to protected/sensitive populations.	● No apparent disproportionate impacts to protected/sensitive populations.	Qualitative assessment of potential impacts to protected populations, based on Census 2000 data.
	Impacts on neighborhood continuity & community cohesion	◐ Potential impact to large-lot residential.	● No direct impacts.	● No direct impacts.	Qualitative assessment of disruption to existing residential communities within 0.25 miles of corridor centerline, based on existing documentation.

Table 5-1: Williams Gateway Freeway Alignment Study-Tier 3 Matrix
June 7, 2005 (continued)

Criteria	Performance Measures	Alternative			Measurement Approach
		3	5	7	
Socioeconomic Impacts (continued)	Business & residential takings (full or partial)	● Direct impacts to existing residences.	● Direct impact to existing TRW operations (commercial).	● Direct impact to existing nurseries (commercial).	Qualitative assessment of existing business, residential & institutional properties potentially required, based on existing documentation. Fewer properties = better performance.
Estimated Cost	Capital cost (millions of dollars)	● \$243-333	● \$278-378	○ \$295-400	Estimated capital cost of new freeway facilities, based on generalized unit cost estimates. Lower cost = better performance.
	Additional Right-of-way cost	●	○ Additional cost due to business takes (TRW).	● Additional cost due to business takes (Nurseries).	Qualitative assessment of additional right-of-way cost to account for business or residential takes.
	Operating & maintenance cost per year	●	●	○	Qualitative assessment of operating & maintenance cost, based on generalized cost per mile by facility type & characteristics.

Table 5-1: Williams Gateway Freeway Alignment Study-Tier 3 Matrix
June 7, 2005 (continued)

Criteria	Performance Measures	Alternative			Measurement Approach
		3	5	7	
Estimated Cost (continued)	Expected cost of environmental mitigations	● Costs assume loss of WUS.	● Costs assume loss of WUS.	○ Costs assume testing & data recovery of cultural resource site and loss of WUS.	Qualitative assessment of relative cost of potentially required environmental mitigations, based on existing documentation.
Pinal County Considerations	Potential impact on natural drainage ways in Study Area	● 0 FEMA crossings.	○ Impacts 1 100- year floodplain and 1 WUS.	● Impacts 1 WUS.	Number of FEMA or wash crossings, based on existing documentation & input from ADOT Williams Gateway Corridor Definition Study.
	Potential impact on existing land use	●	●	○ Direct impacts to existing residential.	Qualitative assessment of potential impact based on existing documentation & input from ADOT Williams Gateway Corridor Definition Study.

Table 5-1: Williams Gateway Freeway Alignment Study-Tier 3 Matrix
June 7, 2005 (continued)

Criteria	Performance Measures	Alternative			Measurement Approach
		3	5	7	
Pinal County Considerations (continued)	Potential environmental impacts (visual & noise)	● No apparent direct visual or noise impacts.	● No apparent direct visual or noise impacts.	○ Would visually impact foreground views and cause noise concerns for approximately 2 miles of adjacent existing residential within potential Pinal County segment.	Visual: Linear miles of adjacent residential communities potentially impacted by freeway. Fewer miles = less impact = better performance. Noise: Linear miles of corridor centerline within 0.25 miles of existing residences or other sensitive receivers. Fewer miles = less impact = better performance.

ADWR = Arizona Department of Water Resources
ASLD = Arizona State Land Department
CFPO=Cactus Ferruginous Pygmy Owl
EPA = Environmental Protection Agency
FEMA = Federal Emergency Management Agency
LOS = Level of Service
RCRA = Resource Conservation & Recovery Act
VMT = Vehicle Miles of Travel
WUS = Waters of the United States

●=Most Desirable
◐=Less Desirable
○=Least Desirable

Source: MAG/Consultant Team

Table 5.2, which was condensed by omitting the “Measurement Approach” column, more clearly shows how the three alternatives compare with one another. For the purpose of comparison, each filled-in circle was awarded three points, each half-filled circle two points, and each empty circle one point. When the circles in each column are added and multiplied by the appropriate number of points, Alternative 3 has 78 points, Alternative 5 has 75 points, and Alternative 7 has 69 points. Alternative 3 bests alternative 5 by a relatively narrow margin of three points (four percent) and Alternative 7 trails Alternative 5 by an additional six points. All three alternatives score within approximately 13 percent of one another. These relatively close results reflect the fact that the Tier 3 alternatives were the result of an extensive pre-screening process designed to select the best options for comprehensive analysis.

The differences between the overall performance of alternatives was most dramatic with regard to the half-filled circles: “Less Desirable” (two-point scores) and empty circles: “Least Desirable” (one-point scores). This occurred because of the numerous measures on which two or more alternatives received the maximum score. Alternative 7 had far fewer “Less Desirable” (two-point) scores than Alternatives 3 and 5. On the other hand, Alternative 7 had by far the most “Least Desirable” (one-point) scores. These differences may be disguised when looking only at the grand totals.

It is also valuable to look at “dominant” alternatives; that is, for how many performance measures does each alternative dominate (receive a higher rating than) both rivals? Alternative 3 dominates eight performance measures, followed by Alternative 7 with five and Alternative 5 with one. Especially noteworthy is the fact that Alternative 3 dominates three of the four cost measures (and ties for first in the fourth measure)—given that the RTP identifies a specific funding level for the Williams Gateway Freeway.

5.3 “Collapsed” Matrix Showing Evaluation Criteria Only

Table 5.3 is a collapsed version of the Tier 3 evaluation matrix, listing the nine evaluation criteria but omitting the performance measures. Each alternative has been given an aggregate score (Most, Less, or Least Desirable) based on a comparison of total point scores within each criterion. The alternative with the most total points was given a filled-in circle, the one with the fewest points received an empty circle, and the one with an intermediate score was awarded a half-filled circle.

Using the three-point scale described earlier, Alternative 3 again has the highest total score, with 23 points, versus 21 for Alternative 5 and 19 for Alternative 7. Alternative 3 achieves the highest possible score on six of the nine criteria and dominates three, including Mobility and Estimated Cost. Alternative 5 has the highest possible score on three criteria and dominates none. Alternative 7 attains the highest score on five criteria and dominates two, but also has by far the largest number of low scores (four versus zero or one for Alternatives 3 and 5).

Table 5.2: Williams Gateway Freeway Alignment Study-Tier 3 Matrix
June 7, 2005

Criteria	Performance Measures	Alternative		
		3	5	7
Mobility	Daily usage of Williams Gateway Freeway--year 2026	●	◐	○
	Number of congested major intersections—year 2026	●	●	●
Safety	Proportion of VMT occurring on safer (high-capacity) facilities	◐	◐	●
General Plan Consistency (at community build out)	Consistency with land use element in adopted General Plan	●	●	●
	Consistency with circulation element in adopted General Plan	●	◐	○
	Consistency with economic development element in adopted General Plan	◐	●	◐
Access	Population within immediate Williams Gateway Freeway travel shed (2016)	◐	○	●
	Population within immediate Williams Gateway Freeway travel shed (2026)	○	◐	●
	Employment within immediate Williams Gateway Freeway travel shed (2016)	●	◐	○
	Employment within immediate Williams Gateway Freeway travel shed (2026)	●	◐	○
	Access to Williams Gateway complex	◐	●	●
Natural Environment	Waters of the United States	◐	◐	◐
	100-year floodplains	●	●	●
	Species & habitats	◐	◐	◐
	Air quality	◐	◐	◐
		○	◐	●
	Visual	◐	●	●
	Noise	◐	●	●
Physical Environment	Cultural resources	●	●	○
	Recreational land uses	●	●	●
	Hazardous materials	○	○	●
	Farmlands	●	●	●
Socioeconomic Impacts	Title VI/Environmental Justice	◐	●	●
	Impacts on neighborhood continuity & community cohesion	◐	●	●
	Business & residential takings (full or partial)	◐	◐	◐
Estimated Cost	Capital cost (millions of dollars)	●	◐	○
	Additional Right-of-way cost	●	○	◐
	Operating & maintenance cost per year	●	◐	○
	Expected cost of environmental mitigations	●	●	○

Table 5.2: Williams Gateway Freeway Alignment Study-Tier 3 Matrix
June 7, 2005 (continued)

Criteria	Performance Measures	Alternative		
		3	5	7
Pinal County Considerations*	Potential impact on natural drainage ways in Study Area	●	○	◐
	Potential impact on existing land use	●	●	○
	Potential environmental impacts (visual & noise)	●	●	○
	● (3 pts)	17x3=51	15x3=45	15x3=45
	◐ (2 pts)	12x2=24	13x2=26	7x2=14
	○ (1pt)	3x1=3	4x1=4	10x1=10
TOTALS		78	75	69

*At the end of the evaluation process after preparation of Table 5.2, additional input was received from staff at the State Land Department. It was concluded that Alternative 3 strongly supports the expected community and development pattern envisioned for State Land holdings in northeastern Pinal County. Based on this input, the scores of the alternatives would be: Alt. 3 = 81 points ; Alt. 5 = 77 points; and Alt. 7 = 70 points. Item # 8 on pages 3 and 38 reflects the input received from State Land Department staff.

Source: MAG/Consultant Team

Table 5.3: Williams Gateway Freeway Alignment Study-Tier 3 Matrix
June 7, 2005

Criteria	Description	Alternative		
		3	5	7
Mobility	Daily usage of Williams Gateway Freeway and number of congested major intersections in 2026	●	◐	○
Safety	Proportion of VMT occurring on high-capacity facilities	◐	◐	●
General Plan Consistency (at community build out)	Consistency with land use, circulation, and economic development elements in adopted General Plan	●	●	○
Access	Population and employment within William Gateway Freeway travel shed in 2016 & 2026, and access to Williams Gateway Complex	●	◐	●
Natural Environment	Impacts to Waters of the US, 100-year floodplains, species & habitat, air quality, visual, and noise	○	◐	●
Physical Environment	Impacts to cultural resources, recreational land uses, hazardous materials, and farmlands	●	●	●
Socioeconomic Impacts	Title VI/Environmental Justice, impacts to neighborhood continuity, and business & residential takings	◐	●	●
Estimated Cost	Capital cost, additional right-of-way cost, operating & maintenance cost, and cost of environmental mitigation	●	◐	○

Table 5.3: Williams Gateway Freeway Alignment Study-Tier 3 Matrix
June 7, 2005 (continued)

Criteria	Description	Alternative		
		3	5	7
Pinal County Considerations	Impacts to natural drainage ways, existing land uses, and noise & visual impacts	●	◐	○
	● (3 pts)	6x3=18	3x3=9	5x3=15
	◐ (2 pts)	2x2=4	6x2=12	0x2=0
	○ (1pt)	1x1=1	0x1=0	4x1=4
Total		23	21	19

Source: MAG/Consultant Team

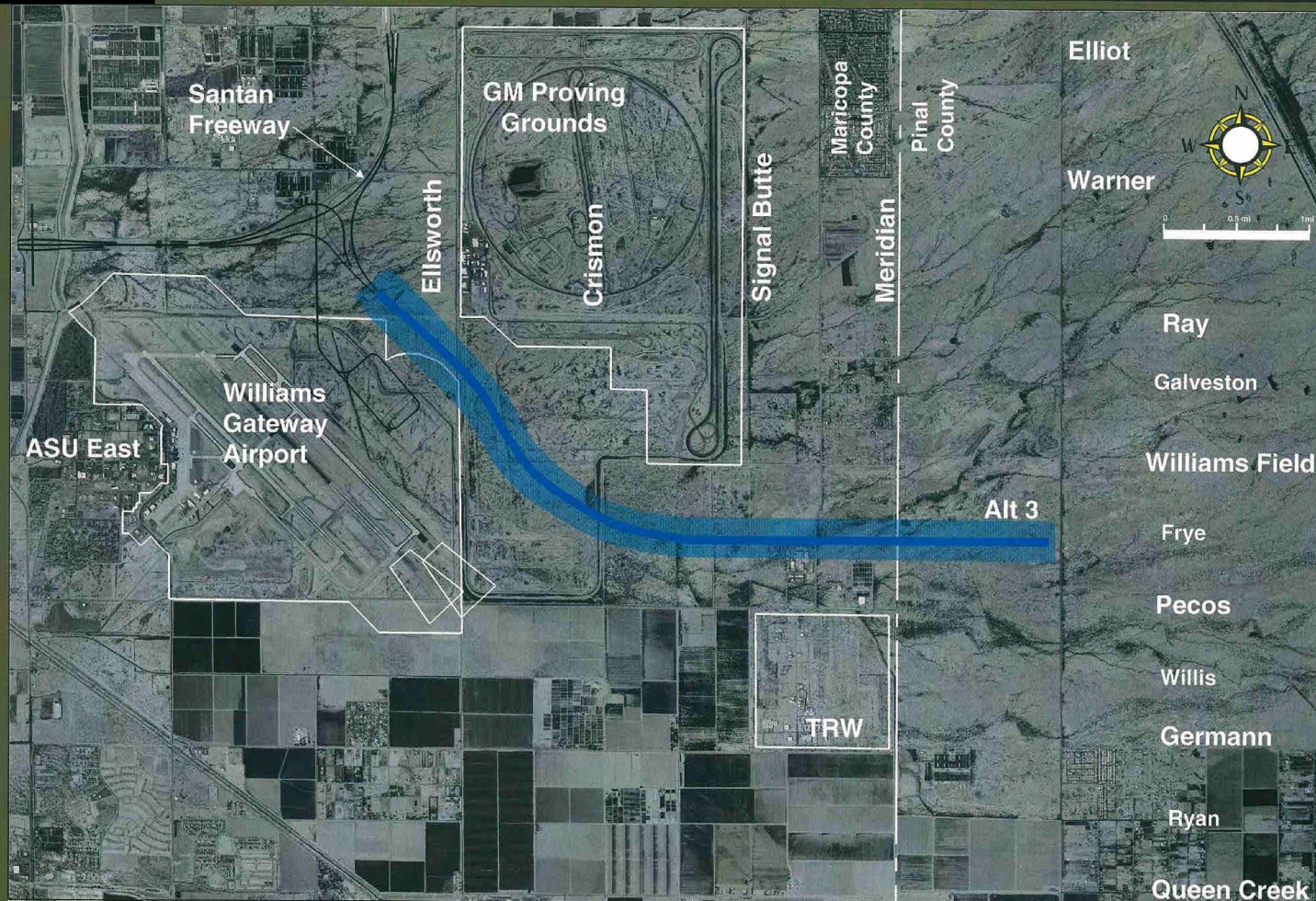
6.0 CONCLUSION

DMJM Harris, consultant to MAG for the Williams Gateway Freeway Alignment Study, recommends Alternative 3 (illustrated in Figure 6-1) as the preferred alternative, to be carried through the MAG committee and Regional Council review process. The reasons for this recommendation include:

1. The preferred alignment is suitable for a high-capacity, access-controlled facility from the Loop 202 Santan Freeway to the Pinal County line.
2. The preferred alignment will adequately serve the Williams Gateway complex and other key employment centers (existing and projected) within the corridor study area.
3. The alignment is consistent with the generalized corridor depicted in the MAG RTP, and endorsed by Maricopa County voters as part of Proposition 400 in November 2004.
4. The alignment achieved the highest score of any alternative in the comprehensive Tier 3 evaluation.
5. The estimated cost of Alternative 3 is within the program budget.
6. This alternative dominates more performance measures than the other two alternatives combined—including three of the four cost measures.
7. Alternative 3 also performs the best overall when the matrix is collapsed to show an aggregate score for each of the nine evaluation criteria.
8. Based on conversations with the Arizona State Land Department staff, the alternative strongly supports the expected community and economic development pattern envisioned for the approximately 275 square mile state land holdings in Pinal County.
9. This alternative is compatible with the planning work that ADOT has done to date on the Williams Gateway Corridor Definition Study in Pinal County.

Figure 6-1

Recommended Corridor



Williams Gateway Freeway Alignment and Environmental Overview Study

DMJM HARRIS

APPENDIX A

APPENDIX A

INVESTIGATION OF “SUPER STREET” OR “PARKWAY” OPTIONS

As an outgrowth of the fundamental task of identifying a preferred alignment for the planned Williams Gateway Freeway (WGF) in Maricopa County, several stakeholders were interested in investigating some options for a super street or parkway at a broad, conceptual level. The purpose of such a facility would be to provide enhanced connections between the WGF and rapidly growing commercial and residential areas of Queen Creek to the south. The super street/parkway options were developed assuming Alternative 3 (Frye Road alignment) as the base alternative.

A-1 Generalized Definition of Super Street or Parkway

Unlike a freeway, which must provide full access control and meet rigorous design standards, the super street and parkway concepts are quite flexible. They can encompass a variety of facility design features, configurations and degrees of access control.

In general, a super street or parkway has more access control and fewer access points than a typical arterial street, but lacks the full access control of a freeway. There is no clear distinction between a super street and a parkway, although a parkway might have more landscaping and amenities geared toward non-motorized transportation. Another term sometimes encountered is “expressway.” The word is sometimes used for a facility that offers a high degree of access management, but has access points or other features that do not meet freeway standards.

Various sources have identified the characteristics of certain highway and street facility types. According to Arizona Revised Statutes (ARS) §28-7901(2), “Freeway” means a divided arterial highway on the interstate or primary system with full control of access and with grade separations at intersections. In ARS §41-512(5), “Parkway” means an area along either or both sides of a highway, street, road or route acquired in fee or by easement by the governmental body having jurisdiction over the highway, street, road or route for the protection of geographic natural flora or scenic values, and established or designated as a parkway by the transportation board.

In ARS §28-6304(5), a “Major Arterial” means an interconnected thoroughfare whose primary function is to link areas in the region and to distribute traffic to and from controlled access highways, generally of regionwide significance and of varying capacity depending on the travel demand for the specific direction and adjacent land uses.

As part of the MAG Roads to Regional Significance concept, the characteristics of Urban Roads of Regional Significance and Gateway Roads of Regional Significance are described in detail.

A-2 Options Identified

MAG asked its consultant to prepare maps showing general alignments of three super street/parkway options. One of these (Ellsworth/Ryan, Figure A-1) involves the use of an alignment following approximately the existing Ellsworth Road south from the Williams Gateway Freeway, then turning east along Ryan Road. The second concept (Crismon/Ryan, Figure A-2) uses Crismon Road as the southward route from the WGF, then begins to curve eastward near Germann Road to follow the east-west Ryan Road alignment beginning at approximately Signal Butte Road. The third concept (Signal Butte/Ryan, Figure A-3) uses Signal Butte Road, then begins curving eastward near Germann Road to follow the east-west Ryan Road alignment beginning near Meridian Road. All three options could terminate at Ironwood Drive in Pinal County, which is envisioned to become an enhanced arterial or other high-level facility in the future.

The *Ellsworth/Ryan Parkway* or super street, as depicted in Figure A-1, would begin at a specially configured traffic interchange at the WGF and Ellsworth Road. A free-flow ramp would be provided from the eastbound WGF to the southbound Ellsworth Parkway, while a loop ramp would lead from northbound Ellsworth Parkway to the westbound WGF (Detail X). The WGF would have local service interchanges at Williams Field Road, Signal Butte Road and Meridian Road, with a grade separation allowing Crismon Road to pass over or under the freeway. The Ellsworth Parkway would be shifted east around the future runway protection zone at Williams Gateway Airport in the vicinity of Pecos Road. Along the parkway or super street, major at-grade intersections would be located at Ellsworth/Williams Field, Ellsworth/Pecos, Ellsworth/Germann, Ellsworth/Ryan, Ryan/Crismon, Ryan/Signal Butte, Ryan/Meridian, and Ryan/Ironwood.

The *Crismon/Ryan Parkway* or super street, as depicted in Figure A-2, would begin at an interchange on the WGF at the Crismon Road alignment. This interchange would provide free-flow ramps from the eastbound WGF to southbound Crismon Parkway and from northbound Crismon to the westbound WGF, and access to Williams Field Road from both directions of the WGF (Detail Y). The Crismon Parkway interchange would therefore double as a local service interchange for Williams Field Road, and Crismon would not continue north as an arterial street across the WGF at this point. Elsewhere on the WGF, a half-diamond interchange could be constructed on the west side of Ellsworth Road, with full interchanges at Signal Butte Road and Meridian Road. The Crismon/Ryan Parkway would feature major at-grade intersections at Pecos Road, Germann Road, Signal Butte Road, Meridian Road and Ironwood Drive.

The *Signal Butte/Ryan Parkway* or super street, as depicted in Figure A-3, would begin at the planned Signal Butte Road interchange on the WGF. In contrast with the preceding concepts, there would be no free-flow ramps to accommodate the high-volume traffic movements between the parkway and the WGF. Instead, Signal Butte Parkway (along with Signal Butte Road to the north) would meet the WGF at a conventional diamond interchange (Detail Z). Full local service interchanges could also be provided along the WGF at Ellsworth Road, Williams Field Road and Meridian Road.

Signal Butte/Ryan is the shortest of any of the parkway options identified, with likely major intersections at Pecos Road, Germann Road, Meridian Road and Ironwood Drive.

The overall vision for a super street or parkway in this area involves restriction of signalized intersections to mile and possibly half-mile streets. It would also limit the number of driveways and restrict driveway access to right-in/right-out only. However, this concept could change as more specific concepts are developed and evaluated in future studies.

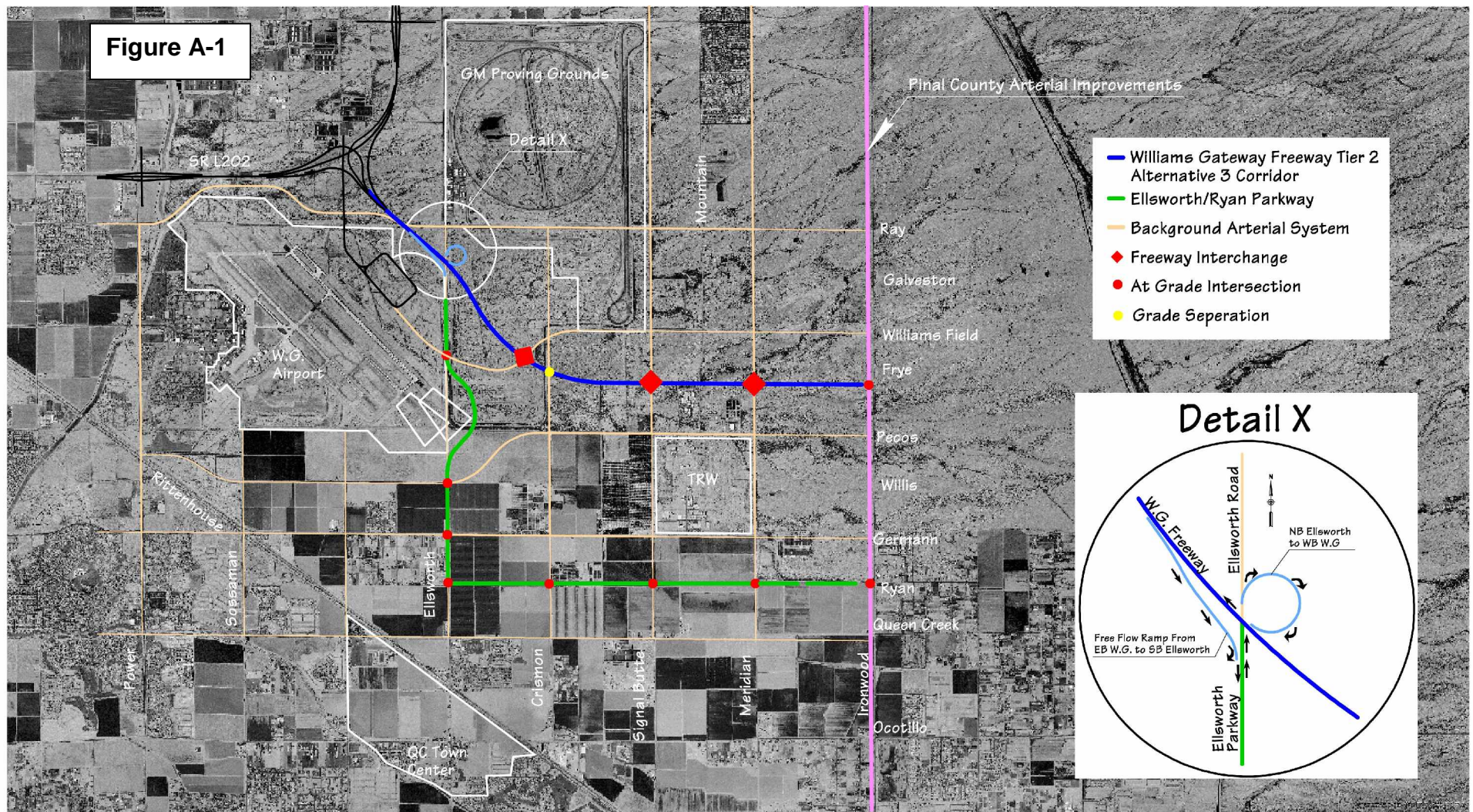
One additional concept, evolved through discussions with stakeholders and drawn up by the MAG consultant (Figure A-4), was designed to illustrate a combination of enhanced arterial (or expressway) alignments. This includes one enhanced facility generally following the Ellsworth Road corridor south from the WGF, a second along the Ryan Road alignment from the Ellsworth facility to Ironwood Drive, and a third along Signal Butte Road connecting the WGF to the Ryan Road facility. The configuration of a potential Ellsworth TI on the WGF would be dependent on ADOT review and approval. Additional TIs along the WGF would be located at Williams Field Road, Signal Butte Road and Meridian Road, with a grade-separated crossing of Crismon Road. The precise alignment of the Ellsworth facility in the Germann Road area would have to be determined jointly by the City of Mesa and the Town of Queen Creek.

A-3 Limitations of this Planning Exercise

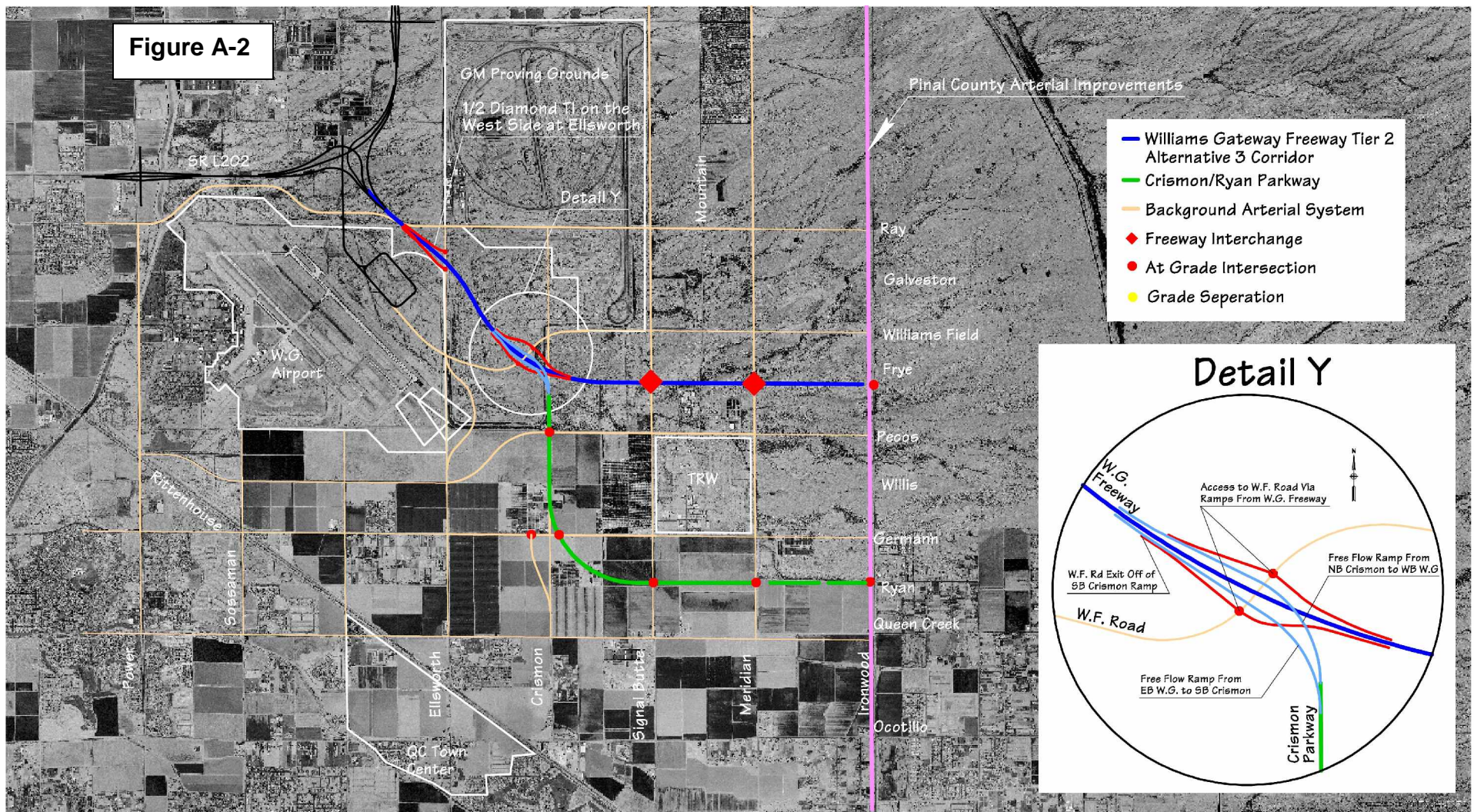
It is important to emphasize that MAG's consultant developed several preliminary options for a future parkway, super street or expressway to supplement a WGF located along the Alternative 3 alignment. There was no attempt to evaluate these options, to compare them with each other, or to conduct a detailed engineering analysis of connections with the WGF or other facilities. Such an effort would require a separate study.

It is equally important to recognize that no funding source has been identified for a super street, parkway or expressway in the Williams Gateway study area. The MAG RTP contains no funds for this type of facility. The City of Mesa has been allocated some RTP funding for improvement of selected arterial streets, and Mesa has indicated that it may be willing to use at least some of these monies to improve southward arterial connections within the Mesa portion of the study area. There is no commitment, however, to provide local funds for any super street or parkway.

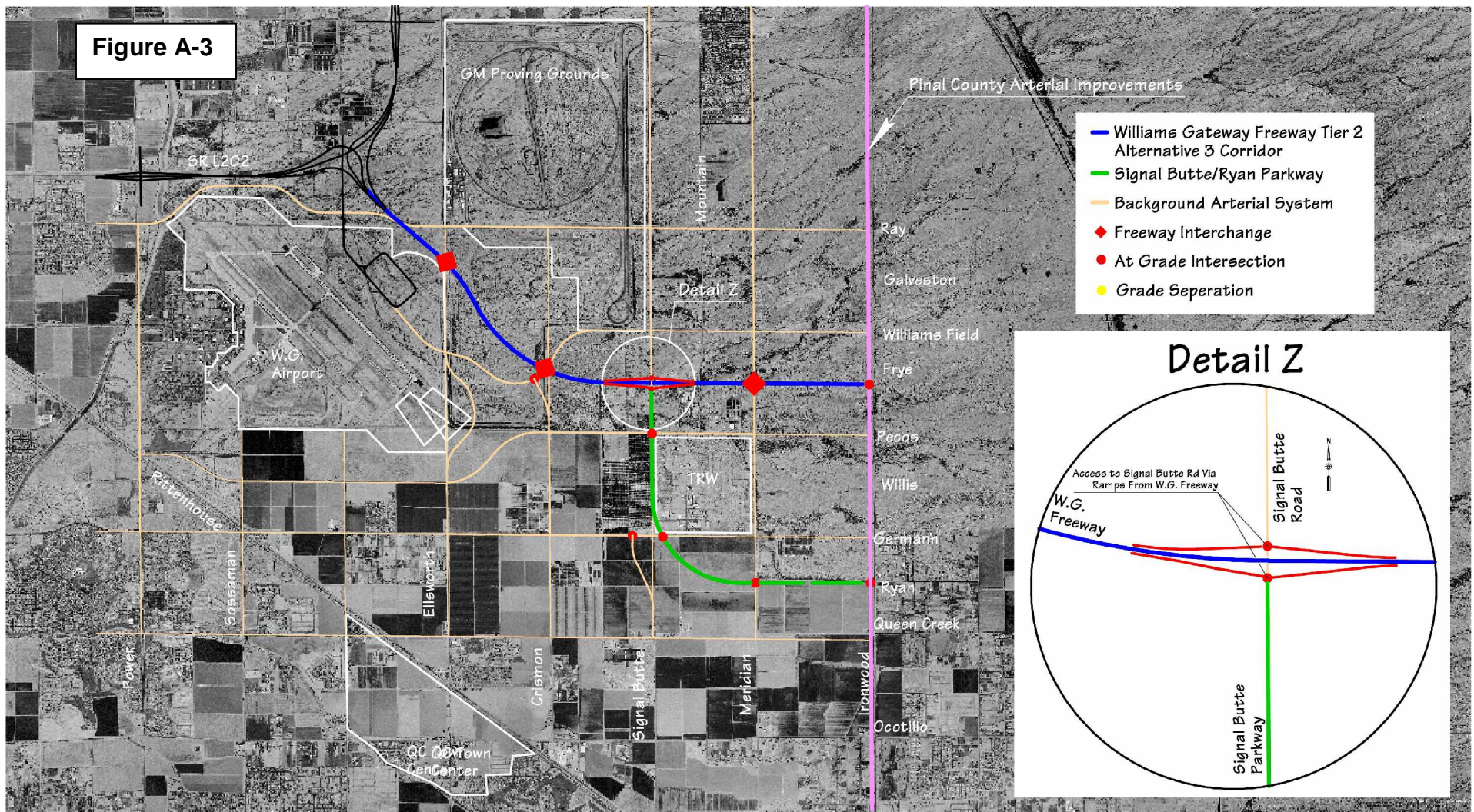
Finally, none of the concepts depicted or described in this appendix has been endorsed by MAG or any of its member jurisdictions, such as the City of Mesa, the Town of Queen Creek or Maricopa County. (There have been some preliminary indications from Queen Creek that an Ellsworth location would be preferred.) This appendix is included for informational purposes only at this time.



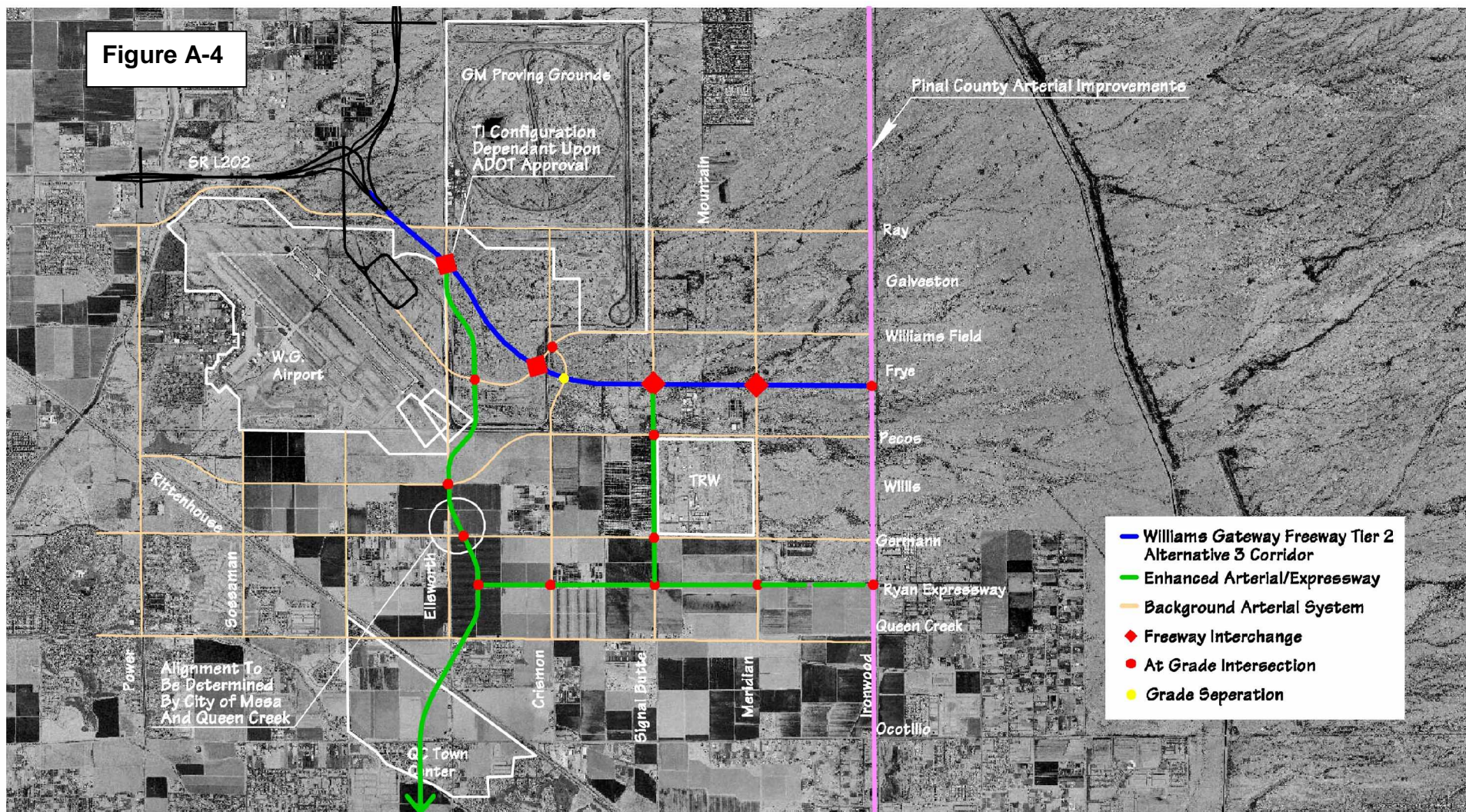
Williams Gateway Freeway and Ellsworth/Ryan Parkway Concept



Williams Gateway Freeway and Crismon/Ryan Parkway Concept



**Williams Gateway Freeway
and Signal Butte/Ryan Parkway Concept**



Williams Gateway Freeway Alternative 3 Plus Enhanced Arterial/Expressway Concept